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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/505,246

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Pierre Gandel

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EXAMINER

PRESTON, ERIK D

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/505,246

Applicant(s)

GANDEL ET AL.

Examiner

Erik D. Preston

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 February 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 14-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 14-21, 23 and 24 is/are rejected.
- 7) ☒ Claim(s) 22 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date: _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date: _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 14,15,18-20,23 & 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hewette et al. (US 4915083, previously cited) in view of Huber (US 5041748, previously cited) in view of Kobayashi et al. (US 4378767, previously cited).

With respect to claim 14, Hewette teaches a linear actuator comprising: a brushless multiphase synchronous motor having a stator (Fig. 3, #38) and a rotor (Fig. 3, #41); a control organ (Fig. 3, #28) having a retracted position and an extended position relative to said electric motor; a driving means for converting a rotational movement of said electric motor into a linear displacement of said control organ so as to drive said control organ from said retracted position toward said extended position over several revolutions of said electric motor, said driving means being reversible; a restoring means (Fig. 3, #53) cooperative with said control organ for restoring said control organ to said retracted position when a power supply to said electric motor is interrupted (Col. 4, Lines 37-50) said restoring means acting at least partially on said control organ (through the shaft) so as to restore said control organ via said driving means into said retracted position, but it does not explicitly teach: (1) a position detection means on said electric motor for adjusting a position of said rotor and said control organ between said retracted position and said extended position, or (2) said driving having an independent reversible reduction means cooperative therewith.

However, Huber teaches: (1) a linear actuator with a position detection means (Fig. 1, #30,31 & 27) on said actuator for adjusting a position of said rotor and said control organ between a retracted position and said extended position (Col. 5, Lines 31-35) and Kobayashi teaches: (2) an actuator with an independent reversible reduction device associated with its driving means (Col. 8, Lines 7-15).

It would have been obvious to one of ordinary skill in the art at the time of the invention to: (1) modify the actuator of Hewette in view of the position detection and control unit as taught by Huber because it provides a means for controlling the rotation of a motor (Huber, Col. 5, Lines 35-37), and (2) modify the actuator of Hewette in view of a reduction device such as is taught by Kobayashi because it provides a means for precisely controlling the linear displacement of an actuator (Col. 8, Lines 11-15).

With respect to claim 15, Hewette in view of Huber in view of Kobayashi teaches the actuator of claim 14, and Hewette teaches that the restoring means has said spring for controlling a rotation of said rotor so as to restore said control organ to said retracted position.

With respect to claim 18, Hewette in view of Huber in view of Kobayashi teaches the actuator of claim 14, and Hewette teaches that said driving means comprises a screw and nut system in which said rotor has an axial bore, said axial bore having a nut therein, the screw being a threaded rod engaged coaxially with the nut (as seen in Fig. 3).

With respect to claim 19, Hewette in view of Huber in view of Kobayashi teaches the actuator of claim 18, Hewette teaches that said nut is carried by said rotor, said nut being movable in a helical direction under said stator, said nut transmitting linear displacement to said control organ, and Huber teaches that said threaded rod (Fig. 1, #18) can be fixed. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the ball screw actuator of Hewette in view of the stationary shaft type ball screw as taught by Huber because it provides an equivalent and equally well-known means for implementing a ball screw linear actuator.

With respect to claim 20, Hewette in view of Huber in view of Kobayashi teaches the actuator of claim 18, and Hewette teaches that the screw and nut system has a ball screw (as seen in Fig. 3).

With respect to claim 23, Hewette in view of Huber in view of Kobayashi teaches the actuator of claim 14, and Huber teaches that said position-detection means comprises a plurality of magneto-sensitive elements (Fig. 1, #30 & 31) integrated into the stator (stationary elements) for detecting magnetic poles of said rotor (as seen in Fig. 1, adjacent to #30 & 31).

With respect to claim 24, Hewette in view of Huber in view of Kobayashi teaches the actuator of claim 23, and Huber teaches that said detection device comprises a linear position sensor (Fig. 1, #27) cooperative with the control organ (Fig. 1, #20).

Claims 16 & 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hewette et al. (US 4915083, previously cited) in view of Huber (US 5041748, previously

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cited) in view of Kobayashi et al. (US 4378767, previously cited) further in view of Sieber et al. (US 5451824, previously cited).

With respect to claim 16, Hewette in view of Huber in view of Kobayashi teaches the actuator of claim 14, and Hewette teaches that said restoring means has a spring acting on the control organ in order to restore said control organ to said retracted position, but it does not teach a restoring means acting directly on the control organ. However, Sieber teaches that an actuator can include a restoring means (Fig. 1, #15) directly actable on a control organ (Fig. 1, #13). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the springy restoring means of Hewette in view of the springy restoring means as taught by Sieber because it provides an equivalent and equally well known means for returning a control organ of an actuator to a reference position (Sieber, Col. 1, Lines 59-65). It also, would have been obvious to one of ordinary skill in the art at the time of the invention to include a springy restoring means directly actable on a control organ of Hewette since it has been held that changing the position of an element of an invention is *prima facie* obvious in the absence of new or unexpected results (*In re Japikse*, 181 F.2d 1019, 86 USPQ 70 (CCPA 1950)).

With respect to claim 17, Hewette in view of Huber in view of Kobayashi teaches the actuator of claim 14, and Hewette teaches that said restoring means comprises a spring (Fig. 3, #53) for controlling the rotation of said rotor in order to restore it the control organ to said retracted position, but it does not teach a first restoring means and a second restoring means being actable directly on the control organ. However, Sieber

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teaches that an actuator can include a first restoring means (Fig. 1, #10 & 11) and a second restoring means (Fig. 1, #15) being actable directly on the control organ (Fig. 1, #13). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the actuator of Hewette in view of the first and second restoring means as taught by Sieber because as was stated above, it provides an equivalent and equally well known means for returning a control organ of an actuator to a reference position (Sieber, Col. 1, Lines 59-65). It also would have been obvious to one of ordinary skill in the art at the time of the invention to include an additional restoring means (such as is taught by Sieber) in the actuator of Hewette since it has been held that the mere duplication of parts has no patentable significance unless a new and unexpected result is produced (*In re Harza*, 274 F.2d 669, 124 USPQ 378 (CCPA 1960)).

Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hewette et al. (US 4915083, previously cited) in view of Huber (US 5041748, previously cited) in view of Kobayashi et al. (US 4378767, previously cited) further in view Lamb (US 6005317, previously cited). Hewette in view of Huber in view of Kobayashi teaches the actuator of claim 14, but it does not teach said driving means having a roller and cam, said roller being cooperative with said control organ and driven by said cam being driven by said rotor. However, Lamb teaches a linear actuator (Fig. 3, #60) with a roller and cam, the roller (Fig. 7, #70) being cooperative with a control organ (Fig. 3, #78) and driven by a cam (Fig. 3, #63) being driven by said rotor. It would have been obvious to

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one of ordinary skill in the art at the time of the invention to modify the ball screw type driving means of Hewette in view of the roller cam type driving means as taught by Lamb because it provides an equivalent and equally well known means for converting rotary motion to linear motion that has the added benefits of being economical and able to maintain a preset speed regardless of load variation (Lamb, Col. 1, Lines 52-59).

Allowable Subject Matter

Claim 22 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: With respect to claim 22, while prior art does teach some of the material included in the claim, it does not teach the combination including a first and second cam with crossed profiles and rotatable with a different speed.

Response to Arguments

Applicant's arguments filed 2/28/2007 have been fully considered but they are not persuasive.

In response to the applicant's argument that neither Hewette, Huber nor Kobayashi teach a screw and nut system with a reversible movement, it is noted that Hewette teaches this limitation.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., the force for retracting the actuator coming from the organ controlled) are not

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recited in the rejected claim(s) (i.e. claim 14). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Erik D. Preston whose telephone number is (571)272-8393. The examiner can normally be reached on Monday through Friday 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren Schuberg can be reached on (571)272-2044. The fax phone


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number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



04/18/2007


PRIMARY EXAMINER